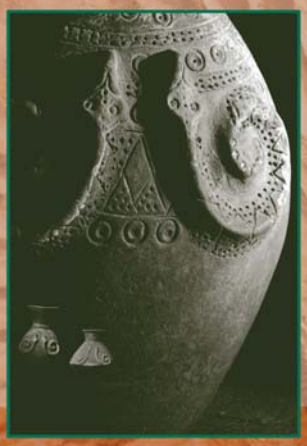
carbon decay period

Radioactive Carbon

Radiocarbon Dating



Radiocarbon dating has been used since post-World War II to estimate ages of organic materials as old as 50,000 years! In archaeology, it is considered an absolute dating technique. It was discovered by Willard Frank Libby in 1949.

Radioactive carbon is formed in the atmosphere when cosmic rays convert nitrogen 14 into carbon 14 (C14). It then drifts down to earth, interacts with carbon dioxide and oxygen, and dissolves in water or is absorbed by plants that are then eaten by animals. When a living organism dies, it stops absorbing C14 and the C14 already in the body slowly decays and reverts back to nitrogen 14. C14 has a half-life of 5,730 years. This means that half the original amount of C14 in organic matter disintegrates after this period, then half of that amount will disintegrate in another 5,730 years, and so on. After 50,000 years, the amount of remaining C14 is too small to use in determining age.

To date samples, scientists count the number of beta particles emitted per minute per gram of material, with the assumption that the rates of forming and decaying C14 are constant. Some branches of science that use the method are archaeology, geology, geophysics, oceanography, and biomedicine. Samples tested include shell, wood, bone, coral, hair, leather, soil, and pottery, to name just a few.

Chemistry: If you were to write the electron dot configuration for the element carbon, how many dots would you write?

Answer: 4

december 2006

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
November 2006 S M T W Th F S: 1 2 3 4 / 5 6 7 8 9 10 11 / 12 13 14 15 16 17 18 / 19 20 21 22 23 24 25 / 26 27 28 29 30	January 2007 S M T W Th F S: 1 2 3 4 5 6 / 7 8 9 10 11 12 13 / 14 15 16 17 18 19 20 / 21 22 23 24 25 26 27 / 28 29 30 31				1 World AIDS Day, Day Without Art	2 SAT Test Date
3	4	5	6	7	8 Bodhi Day (Buddha's Enlightenment)	9 ACT Test Date
10	11	12	13	14	15	16 Chanukah Begins
17	18	19	20 Registration Deadline for January SAT	21	22	23
24	25 Christmas Day	26 Boxing Day, Kwanzaa	27	28	29	30
31						

http://nationalsciencebowl.energy.gov/